INFORMATION

ALLEY

Support News

October 31, 1994

Volume I, Issue 14

"Get Off the Highway and Into the Alley™"

Inside Information...

About the *Information Alley*

The *Information Alley* ™ is a publication of Apple Computer, Inc., Support Information Services. The goal of the *Information Alley* is to help you get full use of your Apple computers, peripherals, and software.

Where to Find the *Information Alley*

The *Information Alley* is available to anyone through a variety of online services and Internet list server capability. For a complete list of where to find the *Information Alley*, call the Apple Fax line at 1-800-505-0171 and request document #20720. You can also get an index to back issues by requesting document #20719. Optionally, you can search the Technical Information Library; use "information alley" as the search string. Select article title *Information Alley: Online Services it is Posted To* or article title *Information Alley: Index of Past Issues*.

Submissions and Letters

We welcome articles that help Apple computer users become more knowledgeable about the functionality of their systems, explain or illustrate complex features or functions, or that describe technical tips or techniques. Send submissions to:

Information Alley
Apple Computer
1200 East Anderson Lane
MS 212-STI
Austin, TX 78752

Fax: (512) 908-8018
email: alley@apple.com

We also welcome letters to the editor and suggestions for future articles. Please send all letters to the preceding address.

Copyright Notice

This newsmagazine is copyrighted, with all rights reserved. Individual articles in this newsmagazine may be reprinted, in their entirety, without prior written permission from Apple as long as full credit is given to Apple Computer and the *Information Alley* is listed as the source of the information.

You must have prior written permission from Apple Computer to excerpt or paraphrase portions of articles from this newsmagazine. For permission, contact:

Janet Christian, Editor
Information Alley
Apple Computer
1200 East Anderson Lane
MS: 212-STI
Austin, Texas 78752

Voice: (512) 908-8975
Fax: (512) 908-8018
email: alley@apple.com

Trademarks

The Apple logo is a trademark of Apple Computer, Inc., registered in the U.S. and other countries.

Apple, the Apple logo, APDA, AppleLink, AppleShare, AppleTalk, A/UX, EtherTalk, HyperCard, HyperTalk, ImageWriter, LaserWriter, LocalTalk, Macintosh, and ProDOS are trademarks of Apple Computer, Inc., registered in the U.S. and other countries.

Apple Desktop Bus, Balloon Help, Disk First Aid, Finder, SuperDrive, Information Alley, "Get off the Highway and Into the Alley", and TrueType are trademarks of Apple Computer, Inc.

Classic is a registered trademark licensed to Apple Computer, Inc.

AppleCare is a service mark of Apple Computer, Inc., registered in the U.S. and other countries.

All other products mentioned in this newsmagazine are trademarks of their respective companies. Mention of third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation. Apple assumes no responsibility with regard to the performance of these products.

Apple Computer, Inc., products (hardware and software) described in this newsmagazine are subject to update and change. This newsmagazine makes no assurance that functions and technical information described here is not superceded by subsequent releases of the product described.

The *Information Alley* is produced using FrameMaker 4.0 on a Power Macintosh running System 7.5.

Information Alley
Japanese Translation

By Janet Christian

In Issue 11, we announced that the *Information Alley* was available on a variety of BBSs and online services in Japan. Now these (and other) services offer the *Information Alley* in Japanese!

Here is a list of the online services and BBSs where users can find the *Information Alley*:

- **NIFTY Serve** Japanese online service
- **NIKKEI MIX** Japanese online service
- **People** Japanese online service
- **FC-Link** FirstClass BBS network
- **Heartway** FirstClass BBS network
- **moovBBS/OneNet Japan** FirstClass BBS (03-5707-7211)
- **MacinFukuoka** FirstClass BBS network (092-722-6385)

Thanks to the newly formed TwoByter group for all their hard work and dedication. The group members are:

- Keiki "Cake" Usui, Translator and Editor
- Hisashi "WoW" Nishimura, Coordinator
- Takeshi "Den" Urayama, Proofreader
- Yasuyuki "Gas" Higuchi, Proofreader
- Tomosugi Yaguchi, Proofreader

Issues 9, 10, 11, and 12 of the *Information Alley* have now been translated. They will translate future issues about 10 days after initial publication (and will continue translating the remaining back issues).

(You must use either the Japanese Language Kit or KanjiTalk operating system to read these translation issues.)

Information Alley Format

As of last issue, we began publishing the *Information Alley* in both Adobe Acrobat and Common Ground formats. We have received applause for the new Acrobat format and requests to continue supporting the Common Ground format. Therefore, for the foreseeable future, at least, we will continue to publish in both formats. Our goal with the *Information Alley* has always been to provide our customers with useful information in the most easily accessible manner possible. If it is to your benefit that we support both formats, then that is what we shall do.

Thank you to those who have let us hear from them. We appreciate your feedback, suggestions, criticisms, and article suggestions. And remember, if you are downloading the *Information Alley* to your local BBS, or to another online service, please let us know so that we may include the information in **New Places to Find the *Information Alley***.

Giving Credit Where It's Due

Issue 11 of the *Information Alley* included an article titled An Overview of A/UX. At the time, we were unable to determine the original author. We received an email indicating that the article is part of an A/UX FAQ (Frequently Asked Questions) document maintained by Jim Jagielski. We thank Dave Emmons for letting us know who originally wrote this fine article. And thanks, Jim, for the excellent information.

Resetting the PowerBook PowerManager

By Kevin Raymond

If you are having any of the following problems, you might need to reset your PowerBook computer's Power Manager:

- Your PowerBook will not turn on at all – using either AC or DC power.
- Your PowerBook works on AC power but not on DC power (or vice versa).
- Your PowerBook intermittently shuts off.
- Your powerBook will not go into sleep mode or does not wake up from sleep mode.
- You insert a battery into your PowerBook but the PowerBook does not see it.
- You notice a sudden drop in battery life (such as from one day to the next).
- The track pad (on the PowerBook 500 series) is not tracking correctly.

This article describes the proper way to reset the Power Manager on each type of Macintosh PowerBook computer.

PowerBook 150

Follow these steps to reset the Power Manager on the PowerBook 150:

STEP	ACTION
1	Unplug the PowerBook and remove the battery.
2	Press and hold the **Forced Shutdown** switch on the back of the computer for 20 to 30 seconds. No longer. The **Forced Shutdown** switch has this symbol on it:
3	Reinstall the battery, reconnect the AC adapter if necessary.
4	Press and release the **Forced Shutdown** switch again to power on.

PowerBook 100 and 500 Series

Follow these steps on the PowerBook 100 and 500 series computers:

STEP	ACTION
1	Remove the AC Adapter and the battery.
2	Let the unit sit without power hooked up for 3 to 5 minutes.
3	Depending on which PowerBook model you have, do the following: • If it's a PowerBook 160, 165, 180 series, briefly press the power button 3 to 4 times. • For the PowerBook 140, 145, 170 series, use two paper clips to simultaneously press and hold both recessed buttons (commonly known as the **Reset** and **Interrupt** buttons) located next to the power button on the back panel of the PowerBook for approximately 5 to 10 seconds. • For the PowerBook 500 series, hold down the **Control**, **Option**, ⌘, and **Power** keys at the same time for approximately 5 seconds. If you do this while the PowerBook is on, you get an immediate power off and reset, so make sure you save all documents before pressing this key sequence.
4	Reinstall the battery, connect the AC Adapter to the wall, plug the Adapter into the PowerBook, and restart. **NOTE:** Plug the Adapter into the wall before plugging it into the PowerBook.

PowerBook 200 Series

Follow this procedure on the PowerBook 200 Series computers:

Potential Printing Problems

ClarisWorks 2.0 and At Ease 2.0.x Printing Problem

By Scott McMillan

There is a known problem with ClarisWorks 2.0 and At Ease when printing a document. If you switch out of ClarisWorks by selecting an Apple Menu Item or switching to another application, and return to print, the document does not print properly. Approximately the first two-thirds of the page prints, cutting or clipping the text on the last one-third of the page.

A workaround is to save the document, close and reopen it, and then print it (without going to the Chooser). You can also select New View from the View menu, then print the new view.

At Ease 2.0.3 fixes this problem. See Volume I Issue 13 (17 October 1994) of the *Information Alley* for the list of online locations where you can find At East 2.0.3, and other, Software Updates.

Printing with QuickDraw GX to a StyleWriter II

By Denny Carag

After Installing QuickDraw GX, you may find that you get an error when you try to print to your StyleWriter II. The error message reports that the Macintosh computer is unable to print through the printer port, and to check connections and try again.

There are a couple of minor problems with the StyleWriter GX drivers. These most likely also apply to other QuickDraw GX serial drivers.

- If the printer port is being used to print to the StyleWriter II, then AppleTalk *must* be **OFF**. If EtherTalk is selected in the Network Control Panel, then AppleTalk can be **ON**.

- If AppleTalk is **ON**, and turned **OFF** to allow for printing, error messages still appear stating to "..check connections". To correct this problem, either turn the StyleWriter II off and on again, or restart the Macintosh.

...Continued from previous page

The **Power** button above the keyboard executes a power-on, but does not reset the Power Manager. You can only use the rear power switch — not the power button above the keyboard — to reset the PowerBook. Press the **Power** button on the rear of the 200 Series computers for 45 seconds to one minute.

This procedure resets power to the Power Manager chip but do not reset the Power Manager code. Use this procedure with PowerBooks that have had system crashes and to fix some power-related problems.

Warning! These procedures remove a RAM disk and its contents.

The Power Manager code can be fully purged by having an authorized service technician disconnect the internal backup battery and letting the unit sit for 10 minutes with all power removed (the battery pulled and the AC Adapter disconnected). This forces the PowerBook to reload a fresh copy of the Power Manager from the system software.

Retrospect Remote Control Panel Security Issue

By Fred Widmer

This article describes a security issue where the Retrospect Remote Control Panel has been installed in your system, and Remote has not been configured by the backup server administrator.

When you install the Retrospect Remote Control Panel and restart, Remote is activated and waits for the server to download a security code and serial number. If the server doesn't do this, anyone with a copy of Retrospect and a set of serial numbers can initialize your system, backup your hard drive to theirs, and then de-initialize your system without you noticing.

Once a Remote Control Panel has been initialized with a serial number, this is not a problem. This security issue only exists if you install the Remote Control Panel in your system and don't initialize it. Either disable the Control Panel or get it initialized by your backup administrator.

Follow these steps to see if your system is set up correctly:

STEP	ACTION
1	Open the Control Panels from the Apple menu. If the °**Remote** control panel is not present (it is the last file listed when viewed by name), it was not installed and this issue does not affect you.
2	If the °**Remote** control panel is present, open it by double clicking. If you see **A/C xxx-xxx-xxxx** (where the **x** characters represent the serial number) in the bottom third of the Retrospect Remote window, then no one can re-initialize your °Remote control panel, unless your security password is guessed. Your password is set by the backup server administrator when the serial number is downloaded. Check with the administrator to find out whether your password is good or bad.
3	If the °**Remote** control panel is present, and it shows something other than what is described in Step 2, then drag the °**Remote** control panel out of your Control Panels folder onto the desktop and restart your Macintosh. This removes the security hole. Also contact your backup server administrator.

Also, while you have it open, check to see when the last time your backup was preformed. If it has been a while, check with your administrator to find out why.

If you have a copy of °Remote in your Control Panels folder, and you are *not* being backed up by Retrospect, you should remove it. There is no reason to have it installed unless it is being used to backup your system. If you are using it, and it is configured properly there is no security problem. Users who just install °Remote into the Control Panels folder, or had it installed for them and forget it, are at risk.

Configuring the Newton Print Pack

By Anthony Snyder

The Newton Print Pack lets you print items from your Newton MessagePad to a printer.
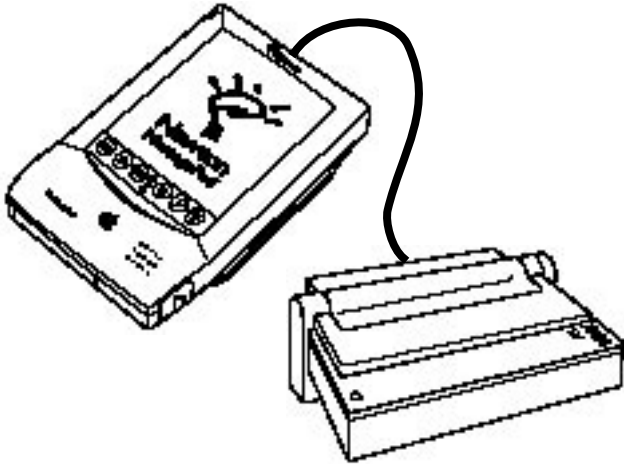
The Newton Print Pack is a cable that contains a serial to parallel data converter and ROM-based printer drivers. These printer drivers are downloaded to the Newton MessagePad by powering on the MessagePad after the Print Pack is connected between the printer and MessagePad.

Configuring the Print Pack

STEP	ACTION
1	Power off both the MessagePad and the printer.
2	Connect the Print Pack between the MessagePad and the printer.
3	Power on the MessagePad and wait ten seconds. The LED on the Print Pack should flash twice; the first flash is short and the second flash is longer. At the end of this period, the printer drivers should be downloaded to the MessagePad.
4	Power on the printer and print the desired item(s).

If you continue to have printing problems, reset the Newton and try these steps again. Also, if your MessagePad is turned off or if the Print Pack is disconnected from either device, you must repeat the preceding procedure.

If your MessagePad unexpectedly powers off while printing or immediately after it is powered on, be sure to install fresh batteries or connect your MessagePad to AC power. The Print Pack draws a large amount of power while printing and at start up (when your MessagePad is downloading the printer drivers), and this may discharge the MessagePad's batteries.

Tips and Tidbits

System 7.x – Force-Quitting a Frozen Application

If an application you are running on your Macintosh "freezes", and you can't get it to quit through normal processes (such as clicking on the close box, selecting **Quit** from the pull-down menu, or typing ⌘-**Q**), press ⌘-**Option-Escape** to force-kill the process. Sometimes you can use this trick to regain control of your machine long enough to save your work from other applications and restart your Macintosh. (After you use this trick, you should generally restart as soon as possible, because memory may have been corrupted.) [From the Macintosh Secret Trick List compiled by Brian Kendig.]

Novell Netware
Remotely Rebuilding the Desktop File

By Bob McConachie

Macintosh systems use a Desktop database that contains information associating the documents and applications with icons, and provides bitmap representations of the icons.

AppleShare servers, and third-party servers that use AFP (Apple Filing Protocol), implement their own version of a Desktop database, enabling Macintosh users to retain their familiar Macintosh graphical user interface when accessing those server's volumes.

Occasionally, you may find that your desktop file becomes "corrupted" (such as custom icons appearing as generic icons). Rebuilding the desktop relinks documents to their correct applications and rewrites the Desktop file itself.

Note: Rebuilding the desktop erases any comments you may have typed in the Get Info windows of files on your disk.

You can remotely rebuild a Novell Netware Desktop file on an AFP volume.

Netware 3.x

Netware 3.x has 3 hidden files in the Desktop AFP subdirectory that collectively contain the database.

Rebuilding Under System 7

If you have System 7.x, follow these steps to rebuild (clear) the Desktop files:

STEP	ACTION
1	Load AFP. It checks to see if the Desktop files exist, and if not, creates them.
2	Load AFP CDT. CDT stands for Clear Desktop. This clears out the databases. It doesn't eliminate them, but merely clears them out.
3	Mount the Novell volume you want to rebuild, then launch the Rebuilder utility.
4	A dialog box appears on your desktop. Highlight the volume you want to rebuild and click on the **Rebuild** button. If you want to rebuild multiple volumes, hold down the **Shift** key, and highlight each volume you want to rebuild then click on the **Rebuild** button.
5	A status bar appears on the desktop showing the rebuilding progress. Also a dialog box appears stating the desktop that has been successfully rebuilt when completed.
6	For the Finder to recognize each new Desktop, you may need to restart or unmount and remount each rebuilt volume.

...Continued from previous page

Rebuilding Under System 6

If you have System 6, follow these steps to rebuild (clear) the Desktop files:

STEP	ACTION
1	Load AFP – It checks to see if the Desktop files exist, and if not, creates them.
2	Load AFP CDT – CDT stands for Clear Desktop. This clears out the databases. It doesn't eliminate them, but merely clears them out.
3	Rebuild the remote Netware volume – Use a Macintosh client running a version of System 6 system software. Hold down the **Option** key and the ⌘ key when connecting to this volume.

If you don't have access to a System 6 system, a utility from Dayna Communications called Dayna Rebuilder (included in the **REBLD.SEA** file) is an alternative. (This utility also ships with Dayna's NetMounter product.)

To contact Dayna Communications:

849 W. Levoy Dr.
Salt Lake City, UT 84123

801-269-7200 (also Tech Support)
801-269-7363 (Corporate Office) Fax

Netware 4.x

Netware 4.x uses a database Btrieve structure, which the server maintains dynamically. The system automatically checks the database for corruption. If it finds evidence of corruption, the server rebuilds the Desktop database. You can also force a rebuild of the database in a Netware 4.x environment within AFP CON:

STEP	ACTION
1	Load AFP CON.
2	Choose **Maintenance** and **Status** option.
3	Choose **Volume** information.
4	Select your volume from the list.
5	Choose **Start Desktop Database Rebuild**, enable **AFP**, choose **Modified**, cancel Desktop.

Repeat these steps for each server you want to rebuild.

Editor's Note: For a detailed description of the Desktop file, as well as ways in which it gets corrupted and recommended actions, watch for *Desktop File Facts* in the next issue of the *Information Alley*.

Tips and Tidbits

Power Macintosh upgrade card

Hold down ⌘–**Option** and open the Upgrade Card control panel, as if you were about to switch between PowerPC and emulation modes. A picture of the development team appears. Select Show Balloons from the help menu and point to the mouth of each person in the picture. They all introduce themselves and either say something humorous (such as "Buddy Snow: It's not MY fault – they told me this picture was for the *5 Star News*.") or they thank someone who helped with the development effort. Look for the young girl in the picture. She says, "Hi, I'm Erica. Do you want to buy any Girl Scout cookies?" [From *System 7.5 Easter Eggs* compiled by Stanton Sky.]

LaserWriter – Checking SCSI Drive Capacity

By Todd Tomlitz

If you have a SCSI hard drive attached to a hard-drive compatible Apple LaserWriter, you may find that you want to check the drive's capacity.

There are two ways to check the drive's capacity. They are:

- Use a PostScript program (see the following **Sample PostScript Program**) to check the hard drive's capacity. This works with any hard-drive compatible LaserWriter.

- Connect the hard drive to a Macintosh. This only works if your hard drive is formatted in Macintosh-compatible format, as with the LaserWriter IIf, IIg, and the LaserWriter Pro 630.

Unfortunately, there is no option to check the capacity of any Laserwriter's hard drive in any version of Apple's LaserWriter Utility.

The LaserWriter II NTX, LaserWriter IIf and IIg, and the LaserWriter Pro 630 are all hard-drive compatible, but they use different types of hard disk formatting.

The LaserWriter NTX uses the LaserWriter Font Utility to initialize attached SCSI hard disk drive(s) as one logical disk device for the PostScript file system. The LaserWriter NTX regards all attached hard drives as a single logical unit, therefore these drives are not recognized by the Macintosh file system.

The LaserWriter IIf and IIg, and the LaserWriter Pro 630 use the LaserWriter Utility to initialize attached SCSI hard drives. This utility initializes the hard drive in a Macintosh compatible (HFS) format and supports the PostScript file system.

Sample PostScript Program

Here is a simple PostScript program that displays the total and free space available on a LaserWriter's hard drive. Cut and paste the following 12 lines of code to TeachText and download the file with the appropriate LaserWriter utility:

```
/Helvetica findfont 14 scalefont setfont
statusdict begin
30 100 moveto
(A page is 1024 bytes.) show
30 115 moveto
(The total number of pages are) show
diskstatus
10 string cvs show
30 130 moveto
(The number of free pages are) show
10 string cvs show
showpage 
```

Alternate Route • Darren Conrad

Computer Practical Jokes

Troubleshooting a Rejected Disk

From the Technical Information Library

You insert a floppy disk in your Macintosh and get the message "This is not a Macintosh disk: Do you want to initialize it?" or "This disk is damaged: Do you want to initialize it?"

When you get these messages and you are certain the disk is properly formatted, click **No**. If you click **Yes**, all the data on the disk is overwritten by the Macintosh and lost.

Immediately lock the disk. This protects your data in case the problem is a damaged directory or misaligned drive; both of these problems can cause your data to be erased from an unlocked disk.

Clues to Look For

- If you are using a Macintosh Quadra 660AV or Quadra 840AV, your disks could be rejected because these models use a new floppy disk controller that reads and writes data more precisely than the one in most other Macintosh computers. It may not be able to read your disk, especially if

it was manufactured by a mass-duplication process. If this occurs with software floppy disks, contact the vendor for another copy of the software.

Note: This problem can occur if composite SIMMs are installed in your machine. Confirm that any additional RAM added is non-composite. Apple only supports non-composite SIMMs.

- If the disk is a 1.4MB high-density disk and the drive can only read 400K or 800K disks (Macintosh computers before and including the Macintosh Plus, the original Macintosh II models, and some Macintosh SE models), it cannot be read by anything other than a SuperDrive (FDHD, or floppy drive, high density).

- If the disk is a high-density disk that was formatted as an 800K disk, your drive gives you a message like "This disk is improperly formatted for this drive. Do you want to initialize it?"

  The best option in this case is to remove the disk and reinsert it in an 800K drive. However, if no 800K drive is available, you can trick the drive by putting tape over the hole in the upper-left corner of the disk (be sure to cover both sides of the hole).

Cover this hole
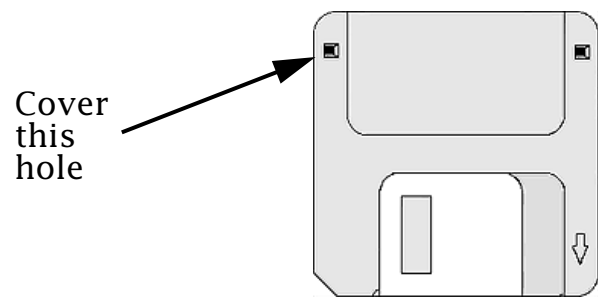
...Continued from previous page

Save any information you need from the disk onto the hard drive, eject the disk, remove the tape, and reformat the disk as soon as possible.

Note: Use this technique only for emergencies.

Putting tape or any other item that could come off in the floppy drive can damage your computer.

• Try the disk in another drive.

If it works properly, this may indicate that one of the drives is misaligned or broken. When a disk that was written on by one drive can't be read by another, the heads on one of the drives is out of alignment. The drive that is misaligned or broken may not be the drive that can't read the disk; try the disk in three or four drives to identify the drive with the problem.

• If the disk is too warm or too cold, the drive may not be able to read it properly.

You can warm up a cold disk safely by setting it on top of your monitor for a few minutes. An overly warm disk can be cooled by placing it in a shady, cool place. **DO NOT** attempt to heat or cool a disk in an oven or refrigerator.

If none of these resolves or identifies the problem, the disk is damaged. You can make a copy of unreadable or damaged disks with MacTools FastCopy (by Central Point Software), then try fixing the problem using a repair utility. Start with Disk First Aid, which is included in your System folder. If it doesn't completely repair the problem, try running Disk First Aid several times.

Other repair or recovery utilities may do more complex repairs for severely damaged disks, or at least recover your data. These include Norton Utilities by Symantec Corp. (800/441-7234 or 408/253-9600) or MacTools Deluxe by Central Point Software (800/626-2778 or 503/690-8080).

Using Multiple Note Pads

From the Technical Information Library

The practical limit of each page of a Note Pad is 248 characters, which limits the entire Note Pad to under 2K. If you find that the Note Pad has too few pages, you can create additional pads by means of the following procedure. Note the directions for System 7.5 at the bottom.
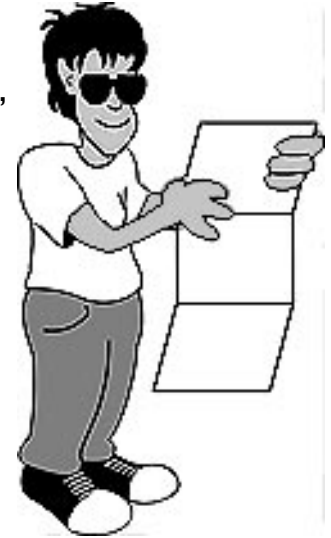
When the Note Pad's eight pages are filled up, rename its icon stored in the System Folder to something like "NOTE 1". A new pad is created the next time you choose Note Pad from the Apple menu. If you need to look at something in the original pad, just rename your current file to something like "NOTE 2", and rename your original file (NOTE 1) back to "Note Pad File". The next time you choose Note Pad from the Apple menu, you access the one you just renamed. You can continue creating storage files for notes in this fashion until the disk fills up.

Under System 7.5, you need to remove and/or rename the Note Pad File which resides at the root level of the system folder. The next time the Note Pad is opened, a new Note Pad File is created.

There are also shareware or freeware utilities which expand on the Note Pad concept by allowing more pages as well as scrolling text fields.

Macintosh Floppy Disks
Unformatted vs. Formatted Capacity

By Wayne Brissette

Some 3.5" floppy disks are marked as 1MB and 2MB, even though the formatted capacity is 800K and 1.44MB respectively. The 1MB and 2MB ratings are unformatted capacities. Regardless of what computer you initialize these disks with, you do not get a data capacity of the full 1MB or 2MB. This is due to the way information is stored on floppy disks. Depending on what operating system is used, more information than 800K or 1.44MB can be placed on a floppy disk. This is because they use additional sectors per disk.

Macintosh Disk Capacities

The following table shows the differences between double density (1 MB unformatted/800K formatted) and high density (2 MB unformatted/1.44MB formatted) diskettes:

Measurement	Double Density	High Density
Bytes/Sector	512	512
Sectors/Tracks	8-12 (variable)	18
Track Density tpi	135	135
Tracks/Side	80	80
Sectors/Disk	1600	2880
Bytes/Side	409,600	737,280
Bytes/Disk	819,200	1,474,560

Typical Disk Sector

A typical disk sector consists of 648 bytes of information. Here is how this information is encoded on the disk:

Typical 648 Byte Sector

1	2	3	4	5	6	7	8	9	10

Part	Description	Size
1	Sector Gap	12 bytes
2	ID Mark	4 bytes
3	Track and Sector Address	4 bytes
4	CRC	2 bytes
5	ID Gap	22 bytes
6	Date Block Gap	12 bytes
7	Data Mark	4 bytes
8	Data Field	512 bytes
9	CRC	2 bytes
10	Data Block Gap	84 bytes

How Disk Space is Calculated

When formatted disk space is calculated, most of the sector information is not included. The only information used is the data field. Here is the formula used to determine the amount of information on a floppy disk.

Sides × Tracks × Sectors × Bytes/Sector = amount of information a disk can store

For a High Density disk this would be:

$2 \times 80 \times 18 \times 512 = 1,474,560$ bytes

The Macintosh double density disk gets a bit more difficult because it uses 5 different speeds. When the speed changes, so does the sectors in per

...Continued from previous page

track. Here is a table with the track information and our formula:

Tracks	Sectors
00 - 15	12
16 - 31	11
32 - 47	10
48 - 63	09
64 - 79	08

Formula

Sides × Tracks × Sectors × Bytes/Sector = Information

Double Density Disk

$2 \times 16 \times 12 \times 512$ = 196,608

$2 \times 16 \times 11 \times 512$ = 180,224

$2 \times 16 \times 10 \times 512$ = 163,840

$2 \times 16 \times 09 \times 512$ = 147,456

$2 \times 16 \times 08 \text{ x} \times 512$ = 131,072

Total disk space = 819,200 bytes

Tips for Better NTSC Output on a Macintosh AV System

By Anthony Snyder

Most Macintosh AV series computer owners are concerned with the quality of NTSC video output. Usually comparisons are made between an RGB monitor and a TV or NTSC monitor. Unfortunately, quality is limited by the NTSC standard itself. The standard was developed nearly 40 years ago and is outdated when compared to the more recent RGB standard. Since the NTSC video standard is drastically different from the RGB standard in the way it addresses video signals, there are some steps to follow to get the best looking Macintosh graphics on an NTSC device. Most Macintosh presentation applications recommend the following for best results:

• View your work on an NTSC monitor while creating the graphics. You will spot any problems as they are created.

• Stay well within the NTSC "safe zone" of 512 x 384 screen resolution (85% of the screen size.

• Avoid one-pixel wide horizontal lines. All lines should be at least two pixels wide and have an even number of lines.

• Don't use contrasting colors in adjoining areas. Buffer contrasting colors with a couple of lines of a neutral intermediate color.

• Instead of pure white, use light shades of gray.

• Use at least 24 point font size for titles.

• If titles are overlaid on video, use contrasting colors for the titles. If the video image is light, use dark letters, and if the video image is dark, use light letters. You can avoid the problem completely by displaying your letters on a solid background color, or contrasting drop shadow.

• Use solid colors to avoid flicker. For example, change the desktop pattern to a solid gray if you are displaying or recording the Finder on NTSC video.

• Don't use dithered patterns, or patterns that have alternating dots or lines.

Popular Card Slot Standards

By Wiley Richardson

This article reviews the basic features of popular card slot standards in the Macintosh and Intel computer architectures.

NuBus

A standard designed by Texas Instruments; later updated to NuBus90. It features self-configuration and bus-mastering on a 32 data bit card. Bus-mastering means a card can take control of the bus, which allows for multi-processor computing. The card self configures using on-board ROM (Read Only Memory).

The card slot is a one-piece socket (female) connector with two rows of pins. The card has a plug (male) connector that plugs into the socket. This slot type is not compatible with any other slot standard.

ISA – Industry Standard Architecture

The basic, most popular card slot in Intel-powered machines. First introduced in the IBM-AT as an improvement over the 8-bit slots in the IBM-XT. The ISA card slot looks something like a two part socket. The left part is the same as the original IBM-XT slot with an additional slot to the right for the new AT signals.

EISA – Extended Industry Standard Architecture

This is the next generation of the IBM-AT card slot. Two new standards emerged around this time, EISA and MCA. EISA provides a 32 bit data path and bus-mastering capability. Its data transfer rate is further increased by 32 bit DMA transfer and burst cycles. It is fully compatible with ISA cards as well. Cards auto-configure themselves using the EISA configuration utility. The slot is the same size and shape as an ISA slot but has a "two tiered" row of contacts for a total of 188.

MCA – Micro Channel Architecture

This is the next generation of the IBM-AT card slot from IBM. Two new standards emerged around this time, EISA and MCA. MCA provides a 32-bit data path and bus-mastering capability with priorities. Its data transfer rate is further increased by 32-bit DMA transfer and burst mode. Cards auto-configure themselves using a configuration utility. It does not differ radically from the EISA standard in capability as implemented in CISC based computers, although the card slot is incompatible. RISC systems from IBM (RS6000) have additional hardware signals on the card slot, which enables much faster data transfers. These slots are not compatible with any previous card slot standard.

...Continued from previous page

There are different formats of the MCA card slot depending on the vendor's implementation of various slot extensions. The extensions are associated with the number of bits enabled for data transfer. There is an 8, 16, and 32 bit variety of a card with additional extensions for video expansion and matched memory expansion.

PCI – Peripheral Component Interface

This is one of two card slot standards that implement the Local Bus standard (the other is VL Bus). PCI was developed by Intel as the next generation beyond MCA and EISA. It operates with 32 data bits at a faster clock rate than previous standards. A 64 data-bit expansion to the standard is planned. This card multiplexes the address and data lines on the card for fewer pins at a slight speed penalty. PCI card slots are similar to MCA slots and are not compatible with other slots. These cards are auto configured by the BIOS of the host system.

VL Bus

The product of the VESA standard committee. The VL Bus is an alternative implementation of the Local Bus standard. It features 32-bit data transfer (with a planned upgrade to 64) at the CPU clock speed (maximum 66MHz). The boards typically run at a maximum of 40MHz. VL Bus cards can be designed as Local Bus Masters or Local Bus Targets. Local Bus Masters can take control of the bus.

This card slot is a standard ISA slot with an additional, in-line socket that contains the VL Bus signals. This makes this slot ISA (and EISA) compatible. A VL Bus machine typically has up to three VL Bus slots in it. These cards are auto configured by the BIOS of the host system.

This table provides a comparison of the different card slot standards:

Card Slot Standard	Bus Clock	Data Path	Max Data Transfer Rate
NuBus	10MHz (20MHz, card to card only using NuBus90)	32 Bits (See Note)	Approximately 10 MB/sec, 37 MB/sec with Burst Mode
ISA	8.33 MHz standard (faster available from some vendors)	16 Bits	8.33 MB/sec
EISA	8.33 MHz standard	32 Bits	33 MB/sec (using all optional EISA features)
MCA	10 MHz standard	32 Bits	20 MB/sec, (160 MB/sec in RS6000 machines)
PCI	33 MHz standard	32 Bits	66 MB/sec, 120 MB/sec with Burst Mode
VL	CPU clock speed with a 66 MHz maximum. Typical design is 40 MHz	32 Bits	66 MB/sec, 120 MB/sec with Burst Mode (@33MHz)

Note: The NuBus data path is often limited to 24 bits for OS compatibility with older Macintosh computers.

ARA and Express Fax Software with Express Modem and GeoPort

By Murray Wheeler

The Express Modem, or GeoPort with the latest Express Modem software and ARA installed, routes incoming calls to the correct application, faxes to Fax Terminal, and data to ARA.

GeoPort with Fax Software and ARA

Macintosh computers using a GeoPort are capable of auto-answering an incoming call and switching to the appropriate application: ARA, Fax Terminal, or voice to a telephone. With current versions of ARA and the GeoPort with Express Modem software, the telephone signal automatically gets switched to the correct application. There is currently no provision to switch to a "voice" or other data application although this may be possible in the future.

Express Modem with Fax Software and ARA

Macintosh PowerBook and Macintosh 630 family computers with Express modems are also capable of auto-answering an incoming call and switching to the appropriate application: ARA or Fax Terminal.

GeoPort with Apple Phone, Fax Software, and ARA

First, Apple Phone only works with Quadra 660AV and 840AV systems, and it is *not* currently compatible with any Power Macintosh, PowerBook, or other Macintosh computers. Apple Phone 1.0.1 is not compatible with either ARA Personal 2.0, or Fax Terminal 1.2 software. You can run only one telecommunications application at a time using the GeoPort telecommunications adapter. Remember the Express Modem software counts as one application, and you can have multiple applications that use this software running at the same time. Apple Phone, which is not modem-based, doesn't use the Express Modem software, so you have an either/or situation if you want to use Apple Phone software.

Auto-switching to ApplePhone may be possible with future versions but as of October 1994 it's not a feature.

Fax Machine Compatibility

Some fax machines don't send the mandatory fax "calling tone", and therefore are not recognized as a fax when the Fax Arbitrator is active and deciding whether an incoming call is fax or data.

If you are uncertain whether the sending fax machine should work with Fax Terminal and ARA, the calling tone is a one-second beep, followed by a one-second pause, followed by the "phone ring". The beep can actually occur before — or after — the phone ring, that is, the sequence can be ring-pause-beep instead. Regardless, this three-second sequence must start as soon as the dialing modem goes off-hook.

The following is specified in the CCITT specification:

"Calling Tone: To indicate a calling non-speech terminal. This signal is mandatory for automatic calling and optional for manual units."

PlainTalk and MacinTalk Differences

By Charlie McCabe

This article describes Speech Recognition and Text To Speech found in PlainTalk, MacinTalk 2, and MacinTalk Pro plus their differences and when to use them.

PlainTalk

PlainTalk provides the Quadra 840AV, Centris/Quadra 660AV, and all Power Macintosh systems seamless integration of Speech Recognition and Text To Speech technologies.

Speech Recognition

The Speech Recognition component of PlainTalk is based on the Casper technology. It is a continuous-speech system that is independent of the person speaking.

Speech Recognition enables a whole new user experience whereby you can streamline operations by simply invoking commands or complex macros by speaking them.

Text to Speech

Text to Speech component of PlainTalk gives an AV computer the ability of reading text based information and synthesizing speech using the computer's speaker.

Multiple voices at various sound quality levels are supported. This enables new capabilities such as audible proof reading or in combination with the telephony capabilities that GeoPort provides to listen to your email messages from remote locations.

Writing Speech Commands

Writing speech commands is accomplished through these methods:

- AppleEvent enabled applications commands are written using AppleScript.

- Non-AppleEvent enabled applications will use a new version of QuickKeys from CE Software that support spoken Commands.

Version Table

The following table provides information on what version of PlainTalk works with various versions of the Mac O/S and computer models:

Version	O/S Version	Macintosh Computer
PlainTalk 1.3	7.5	Quadra 660AV and 840AV; All Power Macintosh computers with a PlainTalk microphone.
PlainTalk 1.2	7.1.2	All Power Macintosh computers with a PlainTalk microphone.
PlainTalk 1.2	7.1, 7.1.1	Quadra 660AV and 840AV.

...Continued from previous page

MacinTalk

MacinTalk software enables any Macintosh to provide Text to Speech capabilities for applications that support Text to Speech. SimpleText is an example of an application that supports Text to Speech.

There are two options available — MacinTalk 2 or MacinTalk Pro — when installing Text to Speech software:

MacinTalk 2

MacinTalk 2 is well suited for low-end environments where available memory is low and CPU bandwidth is limited. Minimum configuration is System 6.0.7 running on a Macintosh Plus.

To use MacinTalk 2 you need these files:

- Speech Manager (1.2.1)

- MacinTalk 2 (1.2)

- MacinTalk 2 Voices (1.2)

- SimpleText (1.1)

MacinTalk Pro

MacinTalk Pro requires System 7 or greater. To use MacinTalk Pro you need these files:

- Speech Manager (1.2.1)

- MacinTalk Pro (1.2)

- SimpleText (1.1)

In addition, you need at least one of the voices from the Voices folder (not the MacInTalk2 Voices file). There are "High Quality" and "Small" versions of Agnes, Bruce, and Victoria. "High Quality" means that there is very little compression on the voice file resulting in high audio fidelity but larger size. "Small" means high compression on the voice file resulting in small voice footprint but lower audio fidelity.

New Places to Find the *Information Alley*

You can now find the *Information Alley* on these online services, BBSs, and CD-ROMs:

- **The Library** BBS (Harrisburg, Pennsylvania – (717) 566-1699

  8,800 Baud and down. Eight bits, 1 stop bit, no parity. Operates 24 hours a day. Uses the Telefinder BBS software. The home of The HERSHEY APPLE CORE.

- **infoWEB** BBS (Hertford, Hertforshire, United Kingdom) – +44 1992 5033242

  Runs at 14.4 kbps on a FirstClass server 24 hours a day.

- **Inside Mac Games** CD-ROM – (708) 486-0636

  3862 Grace Lane
  Glenview, Illinois   60025

  CD-ROM based magazine. Produced monthly – includes all issues of the *Information Alley* published since previous CD-ROM release.

- **Delphi** Online Service

  Accessed via Sprintnet and Tymnet, or Telnet if you have an Internet connection. After logging on to Delphi, type the following to reach the Macintosh SIG:

  GO COM MAC

  From the MAC> prompt, type the following:

  DA DA INFO

  READ INFORMATION ALLEY

Tell Us What You Think

Tell us what you think of the *Information Alley*. We want the *Alley* to be as useful for you as possible. Your feedback will help us reach this goal. Please fill out this form and fax, mail, or email it to the address at the bottom of this page.

Content

Were the articles interesting and informative?   YES   NO   If NO, please explain:

_____

How was the technical depth of the articles?   NOT ENOUGH   ABOUT RIGHT   TOO MUCH
Comments: _____

Did you find any specific article especially useful?   YES   NO   If YES, list which one:

_____

How is the frequency of the magazine?   TOO OFTEN   ABOUT RIGHT   NOT OFTEN ENOUGH
Comments: _____

How is the length of the magazine?   TOO LONG   ABOUT RIGHT   NOT LONG ENOUGH
Comments: _____

Format and Layout

Is the format and layout easy to read and follow?   YES   NO   If NO, please explain:

_____

Do the graphics enhance or clutter the magazine?   ENHANCE   CLUTTER
Comments: _____

Did you read the magazine online or did you print a copy?   ON-LINE   PRINTED COPY
Comments: _____

Please describe ways in which the *Information Alley* could be improved, or give us your ideas on future articles.

_____

Personal Information (optional)

Please let us know who you are in case we have questions about your suggestions or comments.

Name _____   Telephone _____

Company _____   Email _____

Address _____

City _____   State _____   Country _____   Zip _____

Type of computer(s) _____

Primary software applications: _____

Information Alley, 1200 East Anderson Lane, MS: 212-STI, Austin, TX 78752 – email: alley@apple.com; fax: (512) 908-8018